

What is claimed is:

- 5 1. A phase lock loop comprising:
- a reference frequency;
 - a voltage controlled oscillator (VCO);
 - a loop filter coupled to said VCO;
 - a phase detector coupled to said loop filter and said VCO;
 - 10 a frequency ratio generator means, coupled to said phase detector, for
generating a desired frequency based on a fraction expansion of the ratio of said
desired frequency to the reference frequency.